LIST OF CONTENTS

NUMBER 1 JULY

	1	Editors' Page. International System of Units
	5	Editors' Page. References
James E. Watson Jr.	7	President's Message—1985
W. E. Kennedy Jr. **L. L. Cadwell** **D. H. McKenzie**	11	Biotic transport of radionuclides from a low-level radioactive waste site
C. Kunz	25	Carbon-14 discharge at three light-water reactors
Y. Kumamoto	37	Population doses, excess deaths and loss of life expectancy from mass chest x-ray examinations in Japan—1980
Thomas P. Jackson	49	Optimizing the performance of direct-reading dosimeters
S. Sherbini **J. Sykes III** **S. W. Porter Jr.** **G. Lodde**	55	Experimental evaluation of a method for performing personnel β dosimetry using multi-element thermoluminescent dosimeters
C. T. Hess **R. L. Fleischer** **L. G. Turner**	65	Field and laboratory tests of etched track detectors for ^{222}Rn: summer-vs-winter variations and tightness effects in Maine houses
Notes		
Douglas R. Shearer **Glenn L. Donovan** **Marleen M. Moore**	81	Contamination from therapeutic ^{131}I capsules
Vickie L. Spate **Susan M. Langhorst** **Annette M. DuChemin**	84	Excretion of ^{35}S from two contaminated workers
Kunihide Nishizawa **Yoshio Kobayashi**	88	Digital monitoring system for a radioisotope laboratory using a personal computer
David North	92	Pattern of scattered exposure from portable radiographs

G. Williams **J. Jankowski** **W. P. Swanson** **G. Drexler**	94	Comparison of experimental and theoretical depth doses in the ICRU sphere using ^{137}Cs
Yong Feng Nie **Thomas J. Overcamp** **Robert A. Fjeld**	100	An approximate method for estimating the short-term centerline γ absorbed dose due to a continuous, ground-level release
Marsha I. Sheppard	106	Radionuclide partitioning coefficients in soils and plants and their correlation
Letters		
John A. Wolfe	113	Safety with lasers
Book Reviews		
Geoffrey G. Eichholz	115	*Radioactivity in the Environment: Sources, Distribution and Surveillance* by Ronald L. Kathren
Wes Spiers	115	*Chromatography of Technetium-99m Radiopharmaceuticals—A Practical Guide* by Philip J. Robbins
Wes Spiers	116	*Computed Electron Beam Dose Planning (Acta Radiologica, Supplementum* 364*)*, edited by Anders Brahme
Gerald A. Schlapper	117	*Radiologic Science for Technologists* (3rd Edn.) by Stewart C. Bushong
HPS Abstracts	119	Abstracts for the 30th Annual Health Physics Society Meeting in Chicago, IL, 26–31 May 1985
News and Notices	197	
Health Physics Society Prospectus	205	
Health Physics Society Affiliate Members	206	
Instructions to Contributors	209	
New Patents Section	I	New patents and published patent applications from the United States and over 30 other countries
Software Survey Section	III	
Advertisers Index		Appears in the back of this issue

LIST OF CONTENTS

NUMBER 2 AUGUST

J. R. Johnson **D. W. Dunford**	211	Comparison of the ICRP and MIRD models for Fe metabolism in man
Terry L. Lyon	221	Hazard analysis technique for multiple wavelength lasers
K. S. Thind	227	Measurement of γ radiation exposure rates from natural UO_2 fuel pellets
Bernard L. Cohen	239	Transport of elements from soil to human diet: an alternative approach to pathway analysis
Susan K. Rope **F. W. Whicker**	247	A field study of Ra accumulation in trout with assessment of radiation dose to man
John L. Davis	259	Use of computer memory chips as the basis for a digital albedo neutron dosimeter
R. F. Holub **R. F. Droullard** **T. B. Borak** **W. C. Inkret** **J. G. Morse** **J. F. Baxter**	267	Radon-222 and ^{222}Rn progeny concentrations measured in an energy-efficient house equipped with a heat exchanger
Bernard L. Cohen	279	The origin of I in soil and the ^{129}I problem
Notes		
James A. Martin Jr.	287	Potassium iodide: predistribution or not? The real emergency preparedness issue
Kunihide Nishizawa **Nobuyoshi Hamada** **Sakuma Sadayuki**	290	*In-vitro* monitoring of salivary ^{125}I
H. Mussalo-Rauhamaa **T. Jaakkola**	296	Plutonium-239, ^{240}Pu and ^{210}Po contents of tobacco and cigarette smoke
E. A. Maraziotis	302	Gamma activity of the fly ash from a Greek power plant and properties of fly-ash cement
D. S. Popplewell **G. J. Ham** **T. E. Johnson** **S. F. Barry**	304	Plutonium in autopsy tissues in Great Britain

Michael H. Momeni	310	Energy and angular distribution of ^{60}Co γ rays in air
Letters		
J. K. Sutherland	315	Comments on the paper 'Measurement of the effective dose equivalent in a nuclear reactor environment with a personal thermoluminescent dosimeter'
M. L. Walsh	316	Reply to Sutherland
Robert Y. L. Chu	317	Guidelines for issuing personnel dosimeters
Bernard L. Cohen	318	Hazards from sinking of ships with U cargo
A. G. Scott	319	Comments on 'A comparison of alpha spectroscopy and gross alpha techniques for determining working level in uranium mines and houses'
Thomas B. Borak **Robert F. Holub**	320	Reply to A. G. Scott
Allen Brodsky	321	B. L. Cohen's probabilities for human intake and implications for nuclear waste disposal
Ronald E. Zelac	324	Disposal of laboratory-generated liquid radioactive waste
Book Reviews		
Wes Spiers	325	*Particles and Fields 2*, edited by Anton Z. Capri and Abdul N. Kamal
Ralph H. Thomas	325	*The Nobel Prize* by Peter Wilhelm
Geoffrey G. Eichholz	326	*Absorption of Ionizing Radiation* by David W. Anderson
Anthony R. Benedetto	327	*Quality Control in Diagnostic Imaging. A Quality Control Cookbook* by Joel E. Gray, Norlin T. Winkler, John Stears and Eugene D. Frank
Gerald A. Schlapper	327	*Exposures from the Uranium Series with Emphasis on Radon and Its Daughters* (NCRP Report No. 77)
Geoffrey G. Eichholz	328	*Biological Effects of Ultrasound: Mechanisms and Clinical Implications* (NCRP Report No. 74)
Nicholas Tsoulfanidis	329	*Evaluation of Occupational and Environmental Exposures to Radon and Radon Daughters in the United States* (NCRP Report HP No. 78)

LIST OF CONTENTS

Anthony R. Benedetto	330	*Effects of Prenatal Irradiation with Special Emphasis on Late Effects. Proceedings of a Symposium of the European Late Effects Project Group at Bordeaux, France, 29 July 1982,* edited by C. Streffer and G. Patrick
IRPA Guidelines on Non-Ionizing Radiation	331	Guidelines on limits of exposure to ultraviolet radiation of wavelengths between 180 nm and 400 nm (incoherent optical radiation)
	341	Guidelines on limits of exposure to laser radiation of wavelengths between 180 nm and 1 mm
IRPA Abstracts		
	361	Abstracts of papers presented at the 24th Annual Congress of the South African Association of Physicists in Medicine and Biology—Health Physics Group, 26–28 March 1984, Johannesburg, South Africa
	365	Abstracts of papers presented at the Fifth Annual Conference of the Canadian Radiation Protection Association, 1–3 May 1984, Alberta, Canada
	375	Abstracts of papers presented at the 19th Annual Meeting of the Japan Health Physics Society, 21–22 June 1984, Sendai, Japan
News and Notices	381	
Health Physics Society Prospectus	389	
Health Physics Society Affiliate Members	390	
Instructions to Contributors	393	
Software Survey Section	I	
Advertisers Index		Appears at the back of this issue

NUMBER 3 SEPTEMBER

E. Peter-Witt **V. Volf**	395	Comparison of Ca-DTPA and Zn-DTPA in removing ^{234}Th from the rat

Ray D. Lloyd **Craig W. Jones** **Charles W. Mays** **Thomas W. Brammer** **Jeffrey W. Burnham**	405	Effect of Zn-DTPA therapy on the maternal transfer of ^{241}Am or ^{237}Pu to young mice
Pao-Shan Weng **Teh-Chao Chen**	411	Occupational radiation exposures in Taiwan, 1962–1983
C. D. Berger **B. H. Lane**	419	Biometric estimation of chest wall thickness of females
Gabriel E. Pantelias **H. David Maillie**	425	The measurement of immediate and persistent radiation-induced chromosome damage in rodent primary cells using premature chromosome condensation
Dale E. Hankins	435	Effect of air-scattered β particles on instrument and dosimeter response
Atika Khan **Colin R. Phillips**	443	Dependence of electrostatic diffusion of Rn progeny on environmental parameters
Anthony R. Benedetto **Clifton R. Harris** **Richard D. Neff**	455	Measurement of absorbed dose from radionuclide solutions mixed intimately with the FBX dosimeter
Tatsuhiko Uda **Hajime Iba**	479	Efficiency estimation for detecting U α particles in solid-state nuclear track detectors
Notes		
M. P. R. Waligórski **M. Jasińska** **J. Schwabenthan**	491	Enhanced nuclear radiation from camera lenses
D. C. Aumann **F. Buheitel** **H. Faleschini** **L. Friedmann** **G. Müllen**	495	Iodine-129 in mammalian thyroids in the Federal Republic of Germany
G. N. Stradling **J. W. Stather** **S. A. Sumner** **J. C. Moody** **A. Hodgson**	499	The metabolism and decorporation of Pu after inhalation of the tributyl phosphate complex by the rat

Deig-Nevy Sandoval **Isang O. Essien** **P. K. Kuroda**	503	Plutonium fallout at Fayetteville, AR
Hikaru Amano **Atsushi Kasai** **Takeshi Matsunaga**	509	Simultaneous measurement of Rn and its progeny in cave air by liquid scintillation techniques and α-ray spectrometry
J. Bigu	512	Effect of electric fields on ^{220}Rn progeny concentration
K. Marha **D. Charron**	517	The distribution of a pulsed very low frequency electric field around video display terminals
Charles Kunz **Martin Wahlen** **Kendall R. Peterson** **Daniel J. Rodriguez**	522	Krypton-85 purge at Three Mile Island: a comparison of measured and calculated surface air concentrations
Olabode T. Ogunleye **Robert G. Richmond** **Bernard L. Cash**	527	Use of sintered magnesium borate thermoluminescent dosimeters for low dose measurements
Robert W. Pollock	533	High thermoluminescent dosimeter readings outside a medical accelerator
Letters		
Irwin D. Bross	535	Confirm or deny: nuclear submarine workers at Portsmouth Naval Shipyard had excess leukemia
Richard J. Hickey	536	Low-level radiation, malignant disease, extrapolation and 'official science'
Book Reviews		
Hugh F. Henry	539	*Medical Physics. Options in Physics* by Jean A. Pope
Geoffrey G. Eichholz	539	*Long-term Radiation Protection Objectives for Radioactive Waste Disposal* (Report of a group of experts jointly sponsored by the Radioactive Waste Management Committee and the Committee on Radiation Protection and Public Health of the Nuclear Energy Agency)
Geoffrey G. Eichholz	540	*The Technology of High-level Nuclear Waste Disposal (Vol. 2),* edited by P. L. Hofmann
Erratum	543	
News and Notices	545	

LIST OF CONTENTS

Health Physics Society Prospectus	553	
Health Physics Society Affiliate Members	554	
Instructions to Contributors	557	
Software Survey Section	I	DOSE REPORTING SYSTEM PAKRAD—A Packaged Radwaste Management Program SP-55 RADON AND WORKING LEVEL SOFTWARE
Advertisers Index		Appears at the back of this issue

NUMBER 4 OCTOBER

SPECIAL ISSUE

THE U.S. TRANSURANIUM REGISTRY REPORT ON THE ^{241}Am CONTENT OF A WHOLE BODY

ABSTRACT 559
DEDICATION 561
ACKNOWLEDGMENTS 563

PART I

INTRODUCTION 565
HISTORY OF THE CASE 566
- Occupational and Medical History 566
- Chronology and Outline of Postmortem Procedures 566

SUMMARY 567

PART II

INTRODUCTION 569
INITIAL INVESTIGATIONS 569
- Initial Evaluation of Deposition 569

IN-VIVO MEASUREMENTS (1962–1978) 569
POSTMORTEM EVALUATION OF ^{241}Am DEPOSITION 572
- Time of Intake 572
- Route of Intake 572
  - Ingestion 572
  - Inhalation 573
  - Contaminated wound 573
- Evaluation of Uptake Using Model Calculations 573
  - Systemic burden model 573
  - Absorption from wound 574

SUMMARY 574

LIST OF CONTENTS

PART III

INTRODUCTION 577
MEASUREMENTS AND RESULTS 577
General Method 577
Scanning Measurements 577
Head Measurements 579
Count Rate at Other Positions on the Body 580
Estimates of Skeletal Content from External Counting 584
Measurement of the ^{241}Am Content of the Bones 584
Comparison of Bones from the Right and Left Sides of the Body 584
CALIBRATION FACTOR FOR MEASURING ^{238}Pu AND ^{239}Pu IN THE SKELETON 585
SUMMARY 585

PART IV

INTRODUCTION 587
MATERIALS AND METHODS 587
Acquisition and Management of Samples 587
Autopsy 587
Storage of body 588
Skeletal dissection 588
Analytical Procedure 589
Preparation of samples 589
Separation of Am and Pu 589
Electrodeposition 590
Alpha measurements 590
Quality assurance samples 590
RESULTS 591
Plutonium Analyses 591
Americium-241 in Soft Tissues 591
Respiratory tract 591
Liver 591
Combined soft tissues 592
Americium-241 in Skeleton 593
Skull 594
Spine and pelvis 594
Thorax 594
Long bones 595
Bones of hands and feet 596
Reproducibility of bone samples 597
Estimation of Whole Skeletal Content of ^{241}Am 597
Material losses 597
Notation 597
Paired bones and parts of paired bones 597
Vertebral column 597
DISCUSSION 598
SUMMARY 599

PART V

INTRODUCTION 623

COMPARISON WITH REFERENCE MAN 623
Organs and Soft Tissues 624
Skeleton 624
AMERICIUM-241 DISTRIBUTION IN SOFT TISSUES 624
Structural Soft Tissues 625
Lungs 626
Kidneys 626
Testes and prostate gland 626
Liver 627
AMERICIUM-241 DISTRIBUTION IN THE SKELETON 630
Total Skeletal ^{241}Am Content 630
Intraskeletal Distribution 630
Comparison with Animal Data 630
Comparison of Human and Monkey Bone Structure 631
Temporal Changes in ^{241}Am Distribution 633
MODEL DEVELOPMENT 633
Estimation of ^{241}Am Distribution in Human Skeleton at T(0) 633
Temporal Trends of Cation Distribution in the Human Skeleton 634
Rates of Bone Remodelling 634
Assignment of ^{241}Am in Skeleton to Turnover Compartments 635
Variability of Structures and Remodelling Rates 635
Anatomical Definition of Turnover Compartments 636
Americium-241 Fraction in Soft Tissues 636
Development of Mathematical Model 636
Solution of Mathematical Model 639
Assignment of Parameter Values 640
Method of Solution 641
RESULTS AND DISCUSSION 641
Estimation of Initial Intake 641
Predicted Behavior of Systemic ^{241}Am in Tissues 641
Skeleton 641
Liver 643
Soft tissues other than liver 643
Results for Age Controls 644
Retention of ^{241}Am in the Whole Body 646
Excretion Rates 646
Comparison of Results with Current ICRP Model 646
Secondary deposition of ^{241}Am in bone 647
Other Applications 648
Prolonged intake to plasma 648
Predicting effect of chelation therapy 648
Extension to other elements 648
SUMMARY 649
News and Notices 663
Health Physics Society Prospectus 671
Health Physics Society Affiliate Members 672
Instructions to Contributors 675
Software Survey Section I
New Patents Section V
Advertisers Index ..... Appears in the back of the issue

LIST OF CONTENTS

NUMBER 5 NOVEMBER

D. H. Sliney **M. L. Wolbarsht** **A. M. Muc**	677	Editorial. Differing radiofrequency standards in the microwave region—implications for future research
Ralph G. Allen **Scott J. Thomas** **Robert F. Harrison** **Joseph A. Zuclich** **Michael F. Blankenstein**	685	Ocular effects of pulsed Nd laser radiation: variation of threshold with pulsewidth
M. A. Stuchly **D. W. Lecuyer**	693	Induction heating and operator exposure to electromagnetic fields
A. A. Broyles **Charles S. Shapiro**	701	Biological repair with time-dependent irradiation
Yasuhito Igarashi **Atsushi Yamakawa** **Riki Seki** **Nagao Ikeda**	707	Determination of U in Japanese human tissues by the fission track method
Richard B. Codell	713	Potential contamination of surface water supplies by atmospheric releases from nuclear plants
William B. Stroube Jr. **Charles F. Jelinek** **Edmond J. Baratta**	731	Survey of radionuclides in foods, 1978–1982
Reto Zach	737	Contribution of inhalation by food animals to man's ingestion dose
Stella M. Swanson	747	Food-chain transfer of U-series radionuclides in a northern Saskatchewan aquatic system
J. E. Pinder III **A. C. Doswell**	771	Retention of ^{238}Pu-bearing particles by corn plants
J. Reese Voshell Jr. **James S. Eldridge** **Thomas W. Oakes**	777	Transfer of ^{137}Cs and ^{60}Co in a waste retention pond with emphasis on aquatic insects
Kenneth L. Miller **William J. White** **C. Max Lang** **William A. Weidner**	791	Skin exposure to I blocks thyroid uptake of ^{131}I

Sandro Cattarin **Lucio Doretti** **Ulderico Mazzi**	795	Determination of ^{99}Tc in urine by liquid scintillation counting to evaluate internal contamination
Harley V. Piltingsrud **Gerald L. Gels**	805	An evaluation of the external radiation exposure dosimetry and calculation of maximum permissible concentration values for airborne materials containing ^{18}F, ^{15}O, ^{13}N, ^{11}C and ^{133}Xe
D. C. Thomas **K. G. McNeill** **C. Dougherty**	825	Estimates of lifetime lung cancer risks resulting from Rn progeny exposure
S. Whittlestone	847	A high-sensitivity Rn detector incorporating a particle generator
A. Khan **C. R. Phillips**	853	The application of electrets to passive Rn progeny dosimeters
Biserka Kargačin **Krista Kostial**	859	Reduction of ^{85}Sr, ^{137}Cs, ^{131}I and ^{141}Ce retention in rats by simultaneous oral administration of calcium alginate, ferrihexacyanoferrate(II), KI and Zn-DTPA
R. Wirth **V. Volf**	865	Gastrointestinal absorption of Np in rats
Phillip Plato **Joseph Miklos**	873	Production of element correction factors for thermoluminescent dosimeters
T. Straume	883	A radiobiological basis for setting neutron radiation safety standards
E. Thomasz **H. Eckerl** **G. Drexler**	897	Experimental determination of conversion factors between organ doses and measured quantities for external photon irradiation
J. D. Cossairt **J. G. Couch** **A. J. Elwyn** **W. S. Freeman**	907	Radiation measurements in a labyrinth penetration at a high-energy proton accelerator
Claudio Birattari **Annalisa Salomone**	919	Neutron spectrum measurements at a 40-MeV proton cyclotron
Olabode T. Ogunleye **Bhudatt R. Paliwal**	937	A proposed modification of the cavity theory for electrons

Notes

Edward T. Bramlitt 945 Commercial aviation crewmember radiation doses

Richard J. Hickey 949 Risks associated with exposure to radiation: science, pseudoscience and opinion

David Anderson
Roger Hartman
Richard Gilmore
Delonda Pruitt 953 Evaluation of a high-resolution room temperature Si detector for use in clinical health physics

W. K. Chu
W. Sangster
C. A. Dobry 958 Comparison of radiation exposures between conventional and rare-earth screen/film systems

Philip D. LaRiviere 962 Directional response of the Andersson-Braun rem meter in a medical accelerator treatment room

B. Ahluwalia 967 Dose calibrator linearity—a regulatory requirement

Harold M. Ide
William D. Moss
Margaret A. Gautier 970 Rapid screening methods for the analysis of Pu or Am in urine

George John 977 A possible hazard: pressure build-up in sealed ampoules of radionuclides in aqueous solution

C. Wernli 980 A simple method for checking an instrument response at 2.75-MeV photon energy

N. Stanford
R. A. Mellor 982 Detection of ^{60}Co in charcoal cartridges used for airborne radioiodine collection

A. Khan
C. R. Phillips 986 Performance of a passive electret dosimeter for Rn progeny

Y. Ikebe
T. Iida
M. Shimo
H. Ogawa
J. Maeda
T. Hattori
S. Minato
S. Abe 992 Evaluation of α-track detectors of Rn concentrations and f values in the natural environment

J. R. Johnson 996 The relative effect of ventilation on the potential α energy from ^{222}Rn and ^{220}Rn progeny

S. Bernhard **J. A. LeGac** **P. R. Zettwoog** **H. Sequin**	999	Occupational exposure to Rn in non-uranium mines in the European community
S. J. Hu **S. Kandaiya**	1003	Radium-226 and ^{232}Th concentration in amang
C. S. Chong **H. Y. Chong** **H. K. Fun** **L. S. Leong**	1008	Gamma radioactivity level in Sn slag dumps
Letters		
Richard B. Holtzman	1011	Comments on the *Health Physics* review process and on ^{210}Pb and ^{210}Po in the environment
W. John Arthur III **O. Doyle Markham**	1012	Reply to 'Comments on the *Health Physics* review process and on ^{210}Pb and ^{210}Po in the environment'
Santiago Gómez	1012	Comment on 'Radiocontamination in medical centers from diagnostic nuclear medicine procedures'
Wayne Wiatrowski	1013	Reply to Gómez
Richard J. Hickey	1013	Radiation protective effect of bacterial endotoxins: non-specific immunity
C. R. Richmond	1015	Task Group on Reference Man to revise *ICRP Publication* 23
Harold L. Beck **Gail de Planque**	1015	Dose rate conversion factors
Book Reviews		
Abraham S. Goldin	1017	*Environmental Radioactivity* (proceedings of the 19th Annual Meeting of the National Council on Radiation Protection and Measurements)
Gerald A. Schlapper	1018	*Radiation Protection and Measurement for Low-Voltage Neutron Generators* (NCRP Report No. 72)
E. W. Spiers	1019	*Basic Principles of Computed Tomography* by Carlisle Lee Morgan

LIST OF CONTENTS

Gerald A. Schlapper	1019	*Stopping Powers for Electrons and Positrons* (ICRU Report No. 37)
E. W. Spiers	1020	*Technology of Nuclear Magnetic Resonance,* edited by P. D. Esser and R. E. Johnston
Gerald A. Schlapper	1021	*Radiation Dosimetry: Electron Beams with Energies Between 1 and 50 MeV* (ICRU Report No. 35)
Ralph H. Thomas	1021	*The Demon in the Aether. The Life of James Clerk Maxwell* by Martin Goldman; and *Cockcroft and the Atom* by Guy Hartcup and T. E. Allibone
Gerald A. Schlapper	1023	*Microdosimetry* (ICRU Report No. 36)
Errata		
Duchêne	1025	Correction for *HP* **46,** 969–974.
Cawley	1027	Correction for *HP* **47,** 102–106.
News and Notices	1029	
Health Physics Society Prospectus	1037	
Health Physics Society Affiliate Members	1038	
Instructions to Contributors	1041	
New Patents Section	I	New patents and published patent applications from the United States and over 30 other countries
Software Survey Section	III	COED—CALCULATION OF EMERGENCY DOSES PABLM—A COMPUTER PROGRAM TO CALCULATE ACCUMULATED RADIATION DOSES FROM RADIONUCLIDES IN THE ENVIRONMENT (PNL-3209) DITTY—A PROGRAM FOR CALCULATING POPULATION DOSE INTEGRATED OVER TEN THOUSAND YEARS (PNL-4456) ONSITE/MAXI—AN INTRUDER DOSE PATHWAY ANALYSIS PROGRAM FOR BURIED WASTES AND DECOMMISSIONED NUCLEAR FACILITIES RISCOM.H

MPC MIXTURE RATIO COMPUTATION
REMedy—BIOASSAY TO DOSE EQUIVALENT CODE
MICROSHLD—A GAMMA SHIELDING SYSTEM FOR THE IBM-PC
RADIATION DOSE CALCULATIONS DURING ACCIDENT SITUATIONS
SUBDOSA—A COMPUTER PROGRAM FOR CALCULATING EXTERNAL DOSES FROM ACCIDENTAL ATMOSPHERIC RELEASES OF RADIONUCLIDES
KRONIC—A COMPUTER PROGRAM FOR CALCULATING ANNUAL AVERAGE EXTERNAL DOSES FROM CHRONIC ATMOSPHERIC RELEASES FROM RADIONUCLIDES
DACRIN—A COMPUTER PROGRAM FOR CALCULATING ORGAN DOSE FROM ACUTE OR CHRONIC RADIONUCLIDE INHALATION

Advertisers Index Appears in the back of this issue

NUMBER 6 DECEMBER

Lauriston S. Taylor 1043 Invited paper. The problems of radiation double standards: exposure of potentially pregnant persons

Bernard L. Cohen 1053 Survey of one-year average Rn levels in Pittsburgh area homes

S. D. Schery 1061 Measurements of airborne ^{212}Pb and ^{220}Rn at varied indoor locations within the United States

Miron Israeli 1069 Deposition rates of Rn progeny in houses

H. B. Spitz
R. L. Buschbom
G. A. Rieksts
H. E. Palmer 1085 A new method for analyzing high-resolution spectra from whole-body counter *in-vivo* measurements

Brian G. Pankow
John Michalak
Molly K. McGee 1097 Adult human thyroid weight

Philip D. LaRiviere 1105 Radiotherapy technologist dose from high-energy electron medical accelerators

LIST OF CONTENTS

R. W. Leggett	1115	A model of the retention, translocation and excretion of systemic Pu
P. Coll	1139	Aspects relating to the calculation of doses in moving radiation fields
Adel A. Mustafa **Kypros Kouris**	1147	Effective dose equivalent and associated risks from mass chest radiography in Kuwait
José Ródenas Diago **Vicente Serradell García**	1155	Dose calculations from routine releases: a new approach of influence area division
E. Wirth **H. Koehler** **J. Burkhardt**	1165	The suitability of transfer coefficients used for stochastic calculations in radioecology
W. Ambach **W. Rehwald**	1173	Contamination of firn layers by radioactive fission products from atmospheric fallout
Frank Raes	1177	Description of the properties of unattached ^{218}Po and ^{212}Pb particles by means of the classical theory of cluster formation
J. E. McNamee **A. Boykin** **D. Adcock** **J. Crisp**	1189	A method to label cigarette smoke with ^{99m}Tc
G. Kitis **F. Hasan** **M. Tsakiri** **Stef. Charalambous**	1193	The influence of regenerated thermoluminescence on low-dose dosimetry
Adel A. Mustafa **Joseph Sabol** **Jacek Janeczek**	1197	Doses from occupational exposure: a study of radiation doses to workers in Kuwait over a four-year period
Teruko Sawamura **Ikuo Murai** **Hiroaki Tanida** **Yasutomo Ozawa**	1205	Measurement of radiation leaked from a 45-MeV linear accelerator facility by gated counting
David C. Morimoto **Robert H. Tamarin** **Charles K. Levy**	1217	Whole-body biological elimination rates of γ-emitting radionuclides in captive meadow voles, *Microtus pennsylvanicus*

Friedrich Steinhäusler
Ivan Uzunov
Egon Pohl
1229 The main inconsequences in the present radiological protection concept for the general population

G. Nordlund
J. P. Partanen
J. Rossi
I. Savolainen
I. Valkama
1239 Radiation doses due to long-range transport of airborne radionuclides released by a reactor accident—effects of changing dispersion conditions during transport

Raimo Mustonen
Matti Jantunen
1251 Radioactivity of size fractionated fly-ash emissions from a peat- and oil-fired power plant

R. G. Purohit
V. K. Jain
T. Subbaratnam
1261 A unique method of determining ^{3}H intakes as a fraction of the annual limit of intake

Notes

Wil C. Buijs
Frans H. Corstens
Lucas B. Beentjes
1267 Long-term retention of ^{207}Bi in the human body after injection of ^{206}Bi

Kelly Classic
Gary Gross
Richard J. Vetter
1270 Solubility of radionuclides in ash from the incineration of animals

Isabel M. Fisenne
Pamela M. Perry
1272 Isotopic U concentration in human blood from New York City donors

G. R. Eisele
B. H. Erickson
1276 Gonadal retention and localization of ^{241}Am in orally exposed swine

J. E. Pinder III
K. W. McLeod
J. R. Simmonds
G. S. Linsley
1280 Normalized specific activities for Pu deposition onto foliage

Tsuguo Nishikawa
Masayoshi Aoki
Shigeru Okabe
1284 Time variation of ^{222}Rn progeny concentration in rainwater

Bernard L. Cohen
1290 Bioaccumulation factors in marine organisms

Rita Borio
Antonia Antonini
Stefania Chiocchini
Piero Degli Esposti
Valter Papa
1295 Evaluation of dose absorbed by personnel or parents accompanying children in a radiodiagnostic pediatric department

R. W. Leggett	1299	An upper-bound estimate of the gastrointestinal absorption fraction for Pu in adult humans
H. Metivier **R. Masse** **P. W. Durbin** **K. N. Raymond**	1302	Promotion by tetrameric catechoylamide ligands and $CaNa_3$-DTPA of the dissociation *in vitro* of the Pu-transferrin complex formed after intravenous injection of Pu-tri-N-butylphosphate
Eric J. Boeldt **Sue Engelhardt** **Larry Veleke**	1306	An inexpensive method for monitoring effluent air from iodination hoods
Letters to the Editors		
W. H. Henry	1309	Comments on 'Correction factors for survey meter calibrations'
Larry N. Langrill **Arthur L. Boyer**	1309	Reply to Henry
S. Doganis	1310	Comments regarding 'On the escaping radioactivity from coal power plants'
C. Papastefanou **Stef. Charalambous**	1311	Reply to Doganis
Victor E. Archer	1311	In accidents, give KI promptly
Robert A. Meck **M. S. Chen** **Peter J. Kenny**	1312	Even small risks should be evaluated
S. N. Kraitor **K. K. Kushneryova**	1313	Comments on the use of radiation-induced, long-lived free radicals for dose measurement following a radiation accident
Thormod Henriksen	1314	Reply to Kraitor and Kushneryova regarding ESR spectroscopy
Margery J. Swint **Patricia B. Blackburn** **Ronald L. Kathren**	1314	Plutonium deposition in Manhattan District workers: a retrospective look
Book Reviews		
E. W. Spiers	1317	*Radionuclide Techniques in Clinical Investigation* by P. W. Horton
E. W. Spiers	1318	*A Handbook of Public Speaking for Scientists and Engineers* by Peter Kenny

Ralph H. Thomas	1318	*The Young Einstein* by Lewis Pyenson
Geoffrey G. Eichholz	1319	*Miniaturization of High-Energy Physics Detectors,* edited by A. Stefanini
J. W. Poston	1319	*Applied Thermoluminescence Dosimetry,* edited by M. Oberhofer and A. Scharmann
Geoffrey G. Eichholz	1320	*Thermoluminescence and Thermoluminescent Dosimetry* (Vol. III), edited by Y. S. Horowitz
Norman L. McElroy	1321	*Fundamentals of Nuclear Medicine,* edited by Naomi P. Alazraki and Fred S. Mishkin
John A. Wethington Jr.	1321	*Cambridge Physics in the Thirties,* edited by John Hendry
Geoffrey G. Eichholz	1322	*Long-term Radiological Aspects of Management of Wastes from Uranium Mining and Milling* (Nuclear Energy Agency report)
Nicholas Tsoulfanidis	1323	*Radiation Protection—8th Symposium on Microdosimetry,* edited by J. Booz and H. G. Ebert
Anthony R. Benedetto	1323	*Optical Techniques in Biological Research,* edited by D. L. Rousseau
Gerald A. Schlapper	1324	*Determination of Dose Equivalents Resulting from External Radiation Sources* (ICRU Report No. 39)
Gerald A. Schlapper	1324	*Criteria and Methods for Quality Assurance in Medical X-ray Diagnosis (British Journal of Radiology* Supplement No. 18)
Gerald A. Schlapper	1325	*Occupational Hazards from Non-Ionising Electromagnetic Radiation* (Occupational Safety and Health Series No. 53)
Gerald A. Schlapper	1326	*Taming the Atom. Facing the Future with Nuclear Power* by Ian Blair
Gerald A. Schlapper	1326	*Anticipated and Abnormal Plant Transients in Light Water Reactors* (Vol. 1 & 2), edited by Pamela L. Lassahn, Debu Majumdar and George R. Brockett
E. W. Spiers	1327	*Magnetic Resonance in Medicine and Biology* by M. A. Foster

LIST OF CONTENTS

IRPA Guidelines on Non-Ionizing Radiation

1329 Review of concepts, quantities, units and terminology for non-ionizing radiation protection

News and Notices 1363

Health Physics Society Prospectus 1371

Health Physics Society Affiliate Members 1372

Instructions to Contributors 1375

List of 1984–85 Journal Reviewers 1376

Software Survey Section I

ARRRG—A Program for Calculating Radiation Dose to Man from Radionuclides in the Aquatic Environment (PNL-3180)

FOOD—A Program for Calculating Radiation Dose to Man from Radionuclides in the Terrestrial Environment (PNL-3180)

ALLDOS—A Computer Program for Calculation of Radiation Doses from Airborne and Waterborne Releases

TRIP—An Interactive Menu-driven Transportation Dose Analysis Program

Enhanced Color Display of NaI(Tl) Generated Gamma Spectra

Color Graphics Driver for Screening Plutonium in Lung Phoswich Spectra

Computer Generated Gamagraphy of Contaminated Humans

Computer Generated Color Graphical Display of Point Source Emissions and Downwind Trajectory Predictions

Automatic Transfer & Reduction of Gross Alpha and Gross Beta in Drinking Water Counting Data

List of Contents for Vol. 49 XI

Author Index for Vol. 49 XXXIII

Subject Index for Vol. 49 XXXVII

Advertisers Index Appears at the back of this issue